

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Use of Spectrum Bands Above 24 GHz For)	GN Docket No. 14-177
Mobile Radio Services)	
)	
Establishing a More Flexible Framework to)	IB Docket No. 15-256
Facilitate Satellite Operations in the 27.5-28.35)	
GHz and 37.5-40 GHz Bands)	
)	
Petition for Rulemaking of the Fixed Wireless)	RM-11664
Communications Coalition to Create Service)	
Rules for the 42-43.5 GHz Band)	
)	
Amendment of Parts 1, 22, 24, 27, 74, 80, 90,)	WT Docket No. 10-112
95, and 101 To Establish Uniform License)	
Renewal, Discontinuance of Operation, and)	
Geographic Partitioning and Spectrum)	
Disaggregation Rules and Policies for Certain)	
Wireless Radio Services)	
)	IB Docket No. 97-95
Allocation and Designation of Spectrum for)	
Fixed-Satellite Services in the 37.5-38.5 GHz,)	
40.5-41.5 GHz and 48.2-50.2 GHz Frequency)	
Bands; Allocation of Spectrum to Upgrade)	
Fixed and Mobile Allocations in the 40.5-42.5)	
GHz Frequency Band; Allocation of Spectrum)	
in the 46.9-47.0 GHz Frequency Band for)	
Wireless Services; and Allocation of Spectrum)	
in the 37.0-38.0 GHz and 40.0-40.5 GHz for)	
Government Operations)	

**COMMENTS OF
SOUTHERN COMPANY SERVICES, INC.
ON FURTHER NOTICE OF PROPOSED RULEMAKING**

Southern Company Services, Inc. (“Southern”), on behalf of itself and its operating affiliates, hereby submits its comments on certain of the issues raised in the *Report and Order and Further Notice of Proposed Rulemaking*, FCC 16-89 (“*R&O/FNPRM*”), in the above-

captioned matter.¹ In the *R&O*, the FCC adopted service rules to foster the development of 5G services in four bands above 24 GHz, including two bands (28 GHz and 39 GHz) that have been allocated for a new Upper Microwave Flexible Use Service (“UMFUS”), and in the 37 GHz band. The FCC adopted flexible standards for evaluating license renewal applications filed by licensees that use this spectrum for mobile, point-to-multipoint, fixed or satellite services.² In the *FNPRM*, the FCC invited further comment on new performance metrics that could be applied to renewal applications where the spectrum is used for machine-to-machine (“M2M”) or Internet of Things (“IoT”) services.³ Southern’s comments on the *FNPRM* are limited to addressing the need for flexible and realistic metrics that could also serve as the basis for performance criteria in other wireless services where M2M and IoT type services could be offered.

By way of introduction, Southern Company Services, Inc. is a wholly-owned subsidiary service company of Southern Company, a super-regional energy company in the Southeast United States. Southern Company also owns four electric utility subsidiaries – Alabama Power Company, Georgia Power Company, Gulf Power Company, and Mississippi Power Company – which provide retail and wholesale electric service throughout a 120,000 square mile service territory in Georgia, most of Alabama, and parts of Florida and Mississippi. Southern is also engaged in power generation, and in the distribution of natural gas, in a number of markets around the country. Members of the Southern Company family use a variety of communications technologies, including FCC-licensed spectrum, to support the safe and efficient delivery of energy services to their customers.

¹ *Report and Order and Further Notice of Proposed Rulemaking*, FCC 16-89, released July 14, 2016.

² *Id.*, paras. 203-216.

³ *Id.*, paras. 465-470.

Southern submitted Reply Comments on the initial Notice of Proposed Rulemaking in this proceeding, urging the adoption of flexible performance requirements and metrics to accommodate the varying types of services that could be offered in these bands.⁴ Southern expressed its support for standards that also take into consideration radio systems used for private, internal use. In many other radio services, the performance and renewal requirements were adopted under an assumption that the frequencies would only be used for the provision of commercial service to the public. As a result, many performance requirements in other bands do not readily accommodate private systems that are designed to provide service in areas of very low population density, or to provide connectivity with monitoring and control devices that may or may not be located in areas of high population density. Southern noted, by example, that Supervisory Control and Data Acquisition (“SCADA”) systems operated by utilities and other industrial users are M2M communications systems that could be deployed in the bands addressed in this proceeding.

Southern is gratified that the Commission adopted a series of performance metrics tailored to each broad type of service (mobile, point-to-multipoint, fixed, or satellite) that could be offered in these bands. The Commission also made allowance for demonstrations that use a combination of metrics where the licensee provides multiple types of service under a single license.⁵ The Commission acknowledged that the list of metrics adopted in the *R&O* was not intended to be exhaustive, and that other services could develop in these bands with different characteristics. It therefore requested further comment on additional metrics that should be

⁴ Reply Comments of Southern Company Services, Inc., filed February 26, 2016.

⁵ *R&O/FNPRM*, paras. 203-208.

applied to unique or innovative services, citing specifically to the SCADA systems described by Southern.⁶

At the outset, it is important to note that performance requirements must strike an appropriate balance between ensuring that spectrum is not warehoused, while still affording each licensee flexibility to use spectrum without fear that it could lose its license by failing to meet an arbitrary or ambiguous performance standard. Private licensees, in particular, need assurance that they can acquire spectrum and use it for applications such as SCADA, M2M, or other operations where coverage over residential populations is largely, if not totally, irrelevant to the purpose and design of the communications network. Flexibility of use should be accompanied by performance and renewal standards that take this flexibility in account.⁷

As an example, one of Southern's electric operating subsidiaries, Alabama Power Company ("APC"), was recently forced to relinquish a number of geographic area licenses in the 900 MHz band, and spend considerable effort to re-engineer a fully-functioning statewide SCADA network, all because APC's system was found to provide insufficient coverage over the residential population in each license area. APC presented evidence of how this fully-integrated communications network improves the reliability of electric service to millions of households

⁶ *Id.*, paras. 204 and 466.

⁷ The Commission opened a rulemaking in 2010 to clarify and harmonize the performance and renewal requirements for a large number of wireless services. *Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95 and 101 to Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation rules and Policies for Certain Wireless Radio Services*, Notice of Proposed Rulemaking and Order in WT Docket No. 10-112, 25 FCC Rcd 6996 (2010). Southern respectfully requests that the Commission revisit, or act on, the record in that proceeding so that the performance and renewal requirements for all wireless services can be clarified and made relevant to the even wider variety of radio systems that are being deployed today.

and businesses throughout the state by allowing APC to monitor and/or remotely control over 400,000 endpoint devices on APC's electric distribution system.

APC's statewide SCADA network is a classic M2M system needed for instantaneous communications between and among devices. Nevertheless, the ambiguous (and supposedly flexible) "substantial service" rule has been interpreted as requiring coverage over a certain percentage of residential population, even if the network was designed in compliance with the rules to provide coverage to devices that only incidentally relate to population centers. In fact, APC's SCADA network provides public benefit to virtually all of the residents and businesses in APC's electric service territory, even though transmissions under individual licenses do not necessarily cover a high percentage of the residential population. If M2M networks or the Internet of Things ("IoT") are to evolve and flourish, performance requirements and the associated metrics should be realistic indicators that the spectrum is being put to good use without dictating how or where the licensee provides coverage.

In the *FNPRM*, the Commission sought comment on appropriate metrics to evaluate IoT-type deployments, designed primarily to facilitate M2M communications.⁸ As explained above, and as the Commission acknowledges in this proceeding, these services may or may not be deployed in areas of substantial residential population, and may or may not be designed to serve unaffiliated customers. The Commission is therefore proposing to adopt a distinct metric by which to measure the deployment of such services, rather than attempting to modify a population coverage approach. It has requested suggestions on which aspects of such services should be

⁸ *FNPRM*, para. 466.

measured, how they should be measured, and what specific levels constitute an acceptable level of service.⁹

Southern reiterates its support for multiple performance metrics for SCADA and other M2M services, similar to the multiple metrics the Commission adopted for traditional mobile, point-to-multipoint, and fixed services. Southern agrees with earlier comments in this proceeding that useful metrics could include the number of transmitters placed in service, the number of connected devices, the amount of traffic carried, or the number of sessions initiated or established on the network.¹⁰ At present, and as M2M services and the IoT are just emerging, it may be impractical, and unwise, to define specific numbers for the levels of devices, sessions, and data volume that would be appropriate milestones. One can imagine systems with varying levels of throughput, types of devices, network topographies, and data characteristics (*e.g.*, systems for low-priority data retrieval versus mission-critical circuits requiring high reliability, low latency and low polling cycles).

For the inherently ambiguous “substantial service” standard, the Commission gave examples, or even specific metrics, for the types of showings that could be made in different radio services. However, and as noted above, the flexibility originally intended by the substantial service standard is meaningless if there is insufficient guidance on how the standard should be applied in radio services that permit flexible service offerings. In the present rulemaking, and at least in the short-term, it may be adequate for the Commission to describe the intent of the performance requirements in these bands, to explicitly clarify that M2M and IoT operations do not necessarily require any level of coverage over residential population or geographic area, and

⁹ *Id.*

¹⁰ See, *e.g.*, Comments of 4G Americas, filed January 26, 2016, at 10-11; Comments of Cisco Systems, Inc., filed January 28, 2016, at 13-14.

to provide examples of the criteria that a licensee could use to demonstrate that it is providing a meaningful service and not attempting to warehouse spectrum.¹¹

The Commission asks whether it would be practical to implement a usage-based requirement, and how the Commission could verify information provided by licensees. For many M2M systems, it may be very difficult for the Commission to independently verify usage information provided by the licensees, just as it is difficult for the Commission to verify other types of information provided by its regulated entities. Licensees are obligated to provide information that is truthful and complete, and to respond to Commission inquiries for further information. The staff has significant discretion, and exercises that discretion already, to solicit any information it believes necessary to verify a licensee's showing. Over time, and as it gains experience reviewing M2M performance showings, the staff should be able to distinguish between those that represent the provision of meaningful service, and those that are intended to merely game the system. The Commission could also encourage the Wireless Telecommunications Bureau to publish additional guidelines for demonstrating compliance so that licensees have more confidence that the systems they are designing will be found compliant with the performance requirements at license renewal.

¹¹ Because M2M and IoT offerings are not limited to the bands above 24 GHz, the Commission should take this opportunity to also clarify that the staff may apply the criteria adopted in this proceeding to M2M or IoT offerings that are provided under licenses that are already subject to a "substantial service" standard, and that they should not be constrained to evaluating such showings on the basis of population coverage.

WHEREFORE, THE PREMISES CONSIDERED, Southern Company Services, Inc.
respectfully requests that the Commission take action in this docket consistent with the views
expressed herein.

Respectfully submitted,

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